Appl. No.: 09/693,5117
Amdt. dated 12/09/2004
Reply to Office action of 07/09/2004

REMARKS/ARGUMENTS

Applicant would like to thank the Examiner for the thorough review of the present application. Based upon the amendments, the following remarks and the filing of the request for continued examination, Applicants respectfully request reconsideration of the present application and allowance of the pending claims.

The Present Invention

The present invention comprises a method and apparatus for implementing location-based identification in a communication network. The method for implementing location-based identification in a communication network includes establishing a network connection between a host and a network, transmitting data packets from the host through a location-specific connection port and identifying the port at an access concentrator in the form of a port identifier. *The access concentrator is capable of assigning, on a one-to-one basis, a port identifier for every location-specific connection port that is communicating with the controller.* The port identifier is then communicated to a network device, typically a gateway device, and stored in a database in communication with the network device. The method may include tagging the network packets at the access concentrator with a port identifier that corresponds to a media access control (MAC) address. The access concentrator and the network device will tag and communicate port numbers by assigning VLAN (Virtual Local Area Network) identifiers to the ports.

35 U.S.C. § 102 (e) Rejections

Claims 1, 3, 7, 12-15 and 17-23 stand rejected under 35 U.S.C. 102 (e) as being anticipated by United States Patent No. 6,058,429 issued to Ames et al. (the '429 Ames patent).

According to the Office Action, the '429 Ames patent teaches all of the elements of Claim 1.

Additionally, the Office Action states that the '429 Ames patent teaches the further limitations of dependent claims 3 and 17.

The '429 Ames Patent Does Not Teach or Suggest the Location-Identification of Multiple Connection Ports at Any One Access Concentrator

The '429 Ames patent teaches the assignment of only one host per access concentrator at (i.e., switches 134, 136 and 138) at any given time. In this regard, the '429 Ames patent, see Figure 2 and related discussion beginning at Column 4, line 52 – Column 5, line 37, the access concentrators can only assign one port identifier (VLAN tags 102, 110 and 118). The access concentrator is not equipped to assign multiple port identifiers, i.e., one port identifier for each port that is currently accessing the network. Thus, switch 134 can assign VLAN tag 102 to the location port of server 104, client 106 or client 108. However, switch 134 is not capable of assigning multiple individual VLAN tags, one each to server 102, client 106 and client 108.

The present invention and, more specifically, amended independent Claims 1 and 7 require that the access concentrator be capable of assigning a plurality of port identifiers (i.e., unique VLAN tags or the like). Amended Claim 1 requires that "a processor that communicates with an access concentrator to receive *a plurality* of port identifiers assigned by the access concentrator, wherein each port identifier is associated with a location-specific connection port that provides connection for one or more hosts, the processor further determines which of the location-specific connection ports are currently accessing the network by associating each of the received port identifiers with a location-specific connection port." (italics added). Amended Claim7 requires that the access concentrator identify "the location-specific, connection port of each of the hosts at an access concentrator by assigning *one of a plurality of port identifiers* that is mapped to a location of the connection port" (italics added).

For this reason, we believe that Claims 1 and 7 and all dependents that depend there from, which add further limitations, are, as amended distinguishable from the '429 Ames patent and, therefore, patentable.

The '429 Ames Patent Does Not or Suggest a Simplified Network Approach that Eliminates Multiple Access Concentrator Switches

As discussed above the '429 Ames patent teaches a network system that requires multiple access control switches (134, 136 and 138). Multiple access concentrators are required by the Ames teachings because each switch is capable of assigning only one port identifier.

The present invention provides for a more simplified approach, in that, only one access concentrator is required that applies a unique port identifier (i.e., VLAN tag or the like) to the connection port accessing the network.

Hence, the fact that in the present invention the access concentrator is capable of assigning multiple port identifiers (i.e., a unique port identifier for each port that is currently being used by a host as a connection port) means that a minimal amount of access concentrators/switches must be implemented in the network.

Additionally, the '429 Ames patent requires Layer 3 (network layer) switching and access to the destination and source network layer address to route data packets between the switches. This is because the '429 Ames requires multiple switches.

In the present invention, because the access concentrator is capable of assigning a unique port identifier (i.e., VLAN tag or the like) to each port that is currently being used by a host as a connection port) the network gateway device is able to track the location of any type of packet, even if there is no Layer 3 address, as required with some networking protocols.

Claims 1 and 7 indirectly minimize the quantity of access concentrators by requiring the access concentrators to provide one of a plurality of port identifiers for each port that is being used by a host to access the network. The use of multiple port identifiers allows the access concentrator to concurrently assign port identifiers to all the hosts that are accessing the network at different location-specific communication ports.

For this reason, we believe that Claims 1 and 7 and all dependents that depend there from, which add further limitations, are, as amended distinguishable from the '429 Ames patent and, therefore, patentable.

The '429 Ames Patent Does Not Teach How the Network Gateway Device Uses the Port-Identifying Information to Determine the Network Authorization of the Port or to Rely on This Information to Execute an Ancillary Network Application

The '429 Ames patent provides no teaching as how the gateway would use the port-identifying information to determine network authorization or to otherwise use the port-identifying information in conjunction with another network application.

Claims 1 and 7, as amended, require that the port-identifying information be used by the gateway device to determine if hosts have been granted network authorization. The present invention does this by mapping the MAC address of the hosts to the port associated with the port identifier. Claim 7, previously amended, includes the specific step of "identifying, at the network gateway device, one or more hosts that have been granted network authorization based upon port identifiers that are currently stored in the database."

The Applicant respectfully finds no teaching in the '429 Ames patent as to how the gateway device would use the port-identifying information to determine network authorization. The Applicant fails to appreciate how "inspecting the packets sent between the router and the hosts via the access concentrator and storing data indicating the port location of each device" equates to the specific function of determining if hosts have been granted network authorization. The present invention uses a look-up table (database) to map connection ports to one or more hosts (via the hosts MAC address). Applicant fails to appreciate how the mere functions of "inspecting packets and storing data indicating port location" teach determining network authorization for hosts by mapping port locations and hosts.

Claim 18, requires applying results of the identification to a network system application. Applicant fails to appreciate any teaching in the '429 Ames patent that would equate to applying

the results of the port identification at a network system application, such as a billing application (Claim 20).

Thus for reasons stated above, independent claims 1, 7, 18 and the dependent claims that added further limitations, are distinguishable from the teachings of the '429 Ames patent and, thus are patentable.

35 U.S.C. § 103 (a) Rejections

The '429 Ames Patent in view of the '142 Pitcher patent

Claims 2, 8-11 and 16 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over United States Patent No. 6,058,429 issued to Ames et al. (the '429 Ames patent) in view of United States Patent No. 6,370,142 issued to Pitcher et al. (the '142 Pitcher patent).

According to the Office Action, the '429 Ames patent fails to teach the limitations of dependent Claims 2, 8 and 9, however; the Examiner believes that the '142 Pitcher patent teaches such.

The Examiner states that it would have been obvious at the time of the invention to combine the teachings of Pitcher with the teachings of Ames to conserve additional bandwidth by eliminating the exposure of uninterested traffic to certain stations.

The '142 Pitcher Patent Teaches DTAG for the Purpose of Pruning MultiCast Traffic and Does Not Provide a Teaching of DTAG for the Purpose of Identifying the Location of a Host at a Gateway Device.

The '142 Pitcher patent provides a teaching of Dtagging for the purpose of pruning (i.e., reducing the use of) multi-cast traffic to each host within a network. The '142 Pitcher patent

does not provide a teaching nor suggest the use of Dtagging for the purpose of identifying, at a gateway device, the location of the host.

Claims 8 and 9 require that the processor read an identifier (i.e., DTAG or the like) to determine connection ports of host generated packets.

Therefore we are of the opinion that Claims 8 and 9 are patentably distinct and are non-obvious in view of the teachings of the '142 Pitcher patent and the primary reference, the '429 Ames patent.

The '429 Ames Patent in view of the '422 Hunt Patent

Claims 4-6 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over United States Patent No. 6,058,429 issued to Ames et al. (the '429 Ames patent) in view of United States Patent No. 6,539,422 issued to Hunt et al. (the '422 Hunt patent).

According to the Office Action, the '429 Ames patent fails to teach the limitations of dependent Claims 4, 5 and 6, however; the Examiner believes that the '422 Hunt patent teaches such.

The Examiner states that it would have been obvious at the time of the invention to combine the teachings of Hunt with the teachings of Ames to actively check the status of the network by monitoring various devices on the network (hubs, routers, bridges, etc). Furthermore, the SNMP protocol allows the network administrator to manage and be notified in case of a problem in the network.

The '422 Hunt patent Does Not Teach or Suggest How to Use Querying Agent and specifically, SNMP protocol, XML to Identify the Location of a Host

The '422 Hunt patent is a system for controlling hand-held devices. The present invention provides for determination of the location of a host from within an access network and requires no such data collection interface in the host. The '422 Hunt patent teaches the use of SNMP to collect network information for a completely different purpose than the present invention.

Therefore, we are of the opinion that Claims 4-6 are patentably distinct and are non-obvious in view of the teachings of the '422 Hunt patent and the primary reference, the '429 Ames patent.

As such, applicant respectfully submits that all of the independent claims, which have been rejected under 35 U.S.C. § 102 (e), as well as the dependent claims that depend there from and have been rejected under either 35 U.S.C. § 102 (e) or 35 U.S.C § 103 (b), are not obvious by legal standards and, are thus, patentable.

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Conclusion

In view of the proposed amended claims and the remarks submitted above, it is respectfully submitted that the present claims are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present invention.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the US Patent and Trademark Office at Fax No. (703) 872-9306 on the date shown below.

Sarah B. Simmons — Dec. 9, 2004
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